Document details

International Food Research Journal
Volume 25, Issue 6, 2018, Pages 2307-2312

Screening of lutein content in several fresh-water microalgae (Article)

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Abstract

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Lutein is the most abundant xanthophylls in the photosynthetic organisms and its dietary intake is thought to protect against the development of age-related macular degeneration. Microalgae are predicted to be the major contributors of lutein in the future and to date, various species of microalgae has been analyzed for its lutein content . This study examined the lutein content of six chlorophycean microalgae species grown in the laboratory culture under the comparable environmental condition in which the population doubling time (t_d) as well as the maximum growth rate (μ_{max}) for each species was evaluated. Using batch culture operation grown under the heteroautotrophic condition, Scenedesmus dimorphus was observed to accumulate the highest lutein content (60.11 mg/g) with maximal biomass of 0.349 g/L culture. Based on the observations available, it appears that strains of unicellular microalgae of smaller size have appreciably higher intrinsic growth rates than algae of the larger size (Chlorella sp. B > Chlorella sp. TLL > Scenedesmus dimorphus > Scenedesmus obliquus TLL > Desmodesmus sp. TH > Ankistrodesmus sp. TH).

SciVal Topic Prominence

Topic: astaxanthin | Xanthophylls | astaxanthin accumulation

Prominence percentile: 97.798

Reaxys Database Information

View Compounds

Author keywords

Ankistrodesmus | Chlorella | Chlorophycean microalgae | Desmodesmus | Freshwater microalgae | Growth rate | Lutein | Scenedesmus

Funding details

Funding sponsor	Funding number	Acronym
International Islamic University Malaysia		IIUM
Universiti Teknologi MARA		UiTM
Faculty of Pharmacy, Cairo University		

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0011 under the Ministry of Higher Education, Malaysia and by the Biotechnology Engineering Department, Kulliyyah of Engineering, International Islamic University Malaysia, Gombak. The utility for freeze dryer machine was supported by Faculty of Pharmacy, University Teknologi MARA (UiTM)

ISSN: 19854668
Source Type: Journal
Original language: English
Document Type: Article
Publisher: Universiti Putra Malaysia

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